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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,467	01/03/2001	Yoshihiro Tsuchiya	826.1661/JDH	1571

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EXAMINER
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LI, ZHUO H

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 03/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/752,467	<b>Applicant(s)</b> TSUCHIYA ET AL.	
	<b>Examiner</b> Zhuo H Li	<b>Art Unit</b> 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 1-5, 14-24, 26-29, 31-34 and 41-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-13, 25, 30, 35, 40 and 44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 31, 2005 has been entered.

### ***Response to Amendment***

2. This Office action is in response to the amendment filed on January 31, 2005, claims 1-43 are pending, claims 1-5, 14-24, 26-29, 31-34, 36-39 and 41 and 43 are withdrawn, and claims 6-13, 25, 30, 35, 40 and 44 are pending for examination.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 8, the term “any” renders the claim vague and indefinite because the term “any” has an alternative meaning that does not positively identify the claimed limitations.

*Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 6-13, 25, 30, 35, 40 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beier et al. (US PAT. 6,065,018 hereinafter Beier) in view of Kolovson (US PAT. 5,951,695).

Regarding claim 6, Beier discloses a backup system (100, figure 1) for backing up a sharing medium (103, figure 1) by a plurality of computers, i.e., client (102, figure 1), comprising a log management device (106, figure 1 and col. 4 line 60 through col. 5 line 7), when one of the plurality of computers accesses the sharing medium to write data, each entry in a

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logs (105, figure 1 and 204, figure 2) including recording a time of the log (col. 5 line 8 through col. 6 line 11 and col. 8 line 31 through col. 10 line 20, and figures 6a-6b). Beier differs from the claimed invention in not specifically teaches when one of the plurality of computers accesses the sharing medium to write data, managing original data before a write access occurs, and forming an entire log by gathering logs of two or more computers, and a formation device forming data at a backup start point using the entire log. However Kolovson discloses database system comprising a primary node (11, figure 1) and a standard node, i.e., backup node (12, figure 1), wherein each of the nodes comprising a log storage (23, figure 2 and 73, figure 6), respectively (col. 4 line 58 through col. 5 line 30 and col. 6 lines 44-57), when an update operation is process, the primary node send the before-images data with log record stream to the standby node standby node, compares the version of the newly before-images data with log record stream from the primary node, and gives the results of the whether it's new to-be-update, or the same as the as the one in the standby node (col. 6 lines 23-57 and figure 7), in addition, Kolovson teaches the log pool in the local memory (73, figure 6) keeps track of active transactions and the active transactions are stored as log records associated with the active transaction, and when at failover time, the standby node checks the end of log buffer (22, figure 2) stored in log storage (23, figure 2) of primary node for missing log records, i.e., forming an entire log by gathering logs of two or more node, (col. 7 lines 4-39), furthermore, Kolovson teaches when the primary node is failed, the standby node checks the end of the log on log storage (23, figure 2) to make sure that standby node 12 received the end of the log record stream to primary node and initiates a connection to the old primary node as backup, i.e., forming data at a backup start point using the entire log, (col. 8 line 53 through col. 9 line 21 and figure 11). Therefore, it would have been obvious to a

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person of ordinary skill in the art at the time the invention was made to modify the backup system of Beier in having the function of when one of the plurality of computers accesses the sharing medium to write data, managing original data before a write access occurs, and forming an entire log by gathering logs of two or more computers, and a formation device forming data at a backup start point using the entire log, by teaching of the recovery database system of Kolovson, because it guarantees fast database failover, independent of the database workload without imposing a significant performance overhead.

Regarding claim 7, Kolovson discloses the backup system comprising a temporary log storage device (22, figure 2) temporarily storing each log of the plurality of computers, wherein the log management device edits each log stored in the temporary log storage device and forms the entire log (col. 7 lines 10-39 and col. 8 line 53 through col. 9 line 21).

Regarding claim 8, Beier discloses the backup system wherein any of the plurality of computers accesses the sharing medium, the log management device receives an access notice from the computer that has accessed the sharing medium, and stores a log of the computer, thereby forming the entire log (col. 5 lines 8-24).

Regarding claim 9, Beier discloses the backup system further comprising a backup storage device, i.e., remote site (200, figure 2), storing backup data of the sharing medium, wherein the log management device stores the entire log in the back up storage device (col. 5 line 36 through col. 6 line 33).

Regarding claim 10, Beier discloses the backup system further comprising a backup storage device (220, figure 2) storing backup data of the sharing medium and a log storage device (204, figure 2) storing the entire log (col. 5 line 36 through col. 6 line 33).

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Regarding claims 11-12, Beier discloses the backup system further comprising a backup storage device storing backup data of the sharing medium, wherein the log management device writes the entire log over the backup data and a log storage device (204, figure 2) storing a log managed by the log management device, i.e., controller (202, figure 2) and address information of backup data over which a log is written, wherein the formation device writes a log over a corresponding backup data based on the address information (col. 5 line 48 through col. 6 line 33 and col. 8 line 31 through col. 10 line 25, and figure 6a-6b).

Regarding claim 13, Kolovson discloses the backup system wherein the a case that the entire log is not written over backup data of the sharing medium, the formation device refers to the entire log first, and the backup data later if necessary (col. 4 line 66 through col.5 line 29).

Regarding claims 25, 30, 35, 40 and 44, the limitations of the claims are rejected as the same reasons set forth in claim 6.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 6-13, 25, 30, 35, 40 and 44 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Clark et al. (US PAT. 6,076,085) discloses method of one system of a multi-system environment taking over log entries owned by another system (abstract).

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Lomet et al. (US PAT. 5,485,608) discloses method and apparatus for updating information in a computer system using logs and state identifiers (abstract).

Ghosh et al. (US PAT. 6,721,765) discloses database system with improved methods for asynchronous logging of transactions (abstract).

Bhide et al. (US PAT. 5,440,727) discloses asynchronous replica management in shared nothing architectures (col. 3 line 45 through col. 4 line 55).

Kozakura (US PAT. 5,724,581) discloses database management system for recovering from an abnormal condition (abstract).

Hoshina et al. (US PAT. 5,828,821) discloses checkpoint restart method and apparatus utilizing multiple log memories (col. 3 lines 2-48).


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zhuo H Li whose telephone number is 571-272-4183. The examiner can normally be reached on M-F 9:00am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zhuo H. Li 

Patent Examiner  
Art Unit 2186



**MATTHEW D. ANDERSON**  
**PRIMARY EXAMINER**